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P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

MARIAM, DANIEL G

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/614,873

Applicant(s)

AMANO ET AL.

Examiner

DANIEL G. MARIAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/9/03 & 11/17/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 and 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 26, recites the limitation "... a first and second storage section which stores first and second reference information . . ." in lines 6-7; and claim 26 recites "... a first storage section which stores reference information. . ." in line 4. It is unclear what the stored information is comprised of? Does the system trained to know automatically what the reference information suppose to represent? Please clarify.

Since claim 2-25 directly or indirectly depend on claim 1, they are also rejected under 35 U.S.C. 112, second paragraph, for the same reason set forth above for claim 1. Likewise, claim 27 depends on claim 26, and thus rejected under 35 U.S.C. 112, second paragraph, for the same reason set forth above for claim 26.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

4. Claims 1-4, 8, 10, 17 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Osten, et al (5,719,950).

With regard to claim 1, as best understood, Osten, et al discloses a personal verification device (See for example, Fig. 1) comprising: a first detection section (See for example, item 10, in Fig. 1) which detects characteristic information, i.e., specific and/or fingerprint, of an operator, i.e., individual (See for example, col. 6, lines 20-25; and col. 10, lines 1-4); a second detection section (See for example, items 24, 26, or 28, in Fig. 1) which detects a pulse wave, i.e., non-specific and/or pulse wave, of the operator (See for example, col. 6, line 56-65; col. 10, lines 16-23); an index extraction section which extracts at least one index, i.e., major peaks, for example, by processing the pulse wave detected by the second detection section (See for example, col. 10, lines 24-30); a first storage section which stores first reference information which is compared with the characteristic information (See for example, col. 10, lines 5-11 or item 346, in Fig. 7); a second storage section which stores second reference information which is compared with the at least one index (See for example, col. 10, lines 31-33 or item 332, in Fig. 7); and a verification section which outputs a signal, i.e., match or no match, indicating that the operator is true, i.e., acceptable or confirming the identity of the individual, when the operator is determined to be the same person as a registered person based on the result of comparison between the characteristic information and the first reference information, and also to be alive based on the result of comparison between the at least one index and the second reference information (See for example, items 350, in Fig. 7; col. 10, lines 5-11 and lines 39-49; and col. 6, lines 13-19)

With regard to claim 2, the personal verification device as defined in claim 1, wherein the index extraction section includes a wave height extraction section which extracts as the at least one index a wave height of at least one of a plurality of inflection points, i.e., major peaks, in the

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pulse wave detected by the second detection section. Although Osten, et al does not refer the pulse that is generated during the collection or verification of the physiological or non-specific information as a pulse wave, this feature is considered inherent because Osten, et al does detect signals that contain major peaks which inherently includes signals that contain valley locations wherein as these pulse signals propagates or repeated periodically, they generally create patterns that contain a wave pattern (See for example, col. 8, lines 4-64; and col. 10, lines 17-30).

With regard to claim 3, the personal verification device as defined in claim 1, wherein the index extraction section includes a time extraction section which extracts as the at least one index the time until occurrence of at least one of a plurality of inflection points in the pulse wave detected by the second detection section (which reads on col. 8, lines 57-64; and col. 10, lines 17-25).

With regard to claim 4, the personal verification device as defined in claim 1, wherein the index extraction section includes a wave height ratio extraction section which extracts as the at least one index the wave height ratio of a plurality of inflection points in the pulse wave detected by the second detection section (See for example, col. 10, lines 17-42).

With regard to claim 8, the personal verification device as defined in claim 1, wherein the index extraction section is an amplifier which amplifies the pulse wave detected by the second detection section, the amplifier extracting as the at least one index an amplification ratio when amplifying the pulse wave into a signal having an amplitude larger than a predetermined amplitude by using an auto gain control function (See Figs. 4-6).

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With regard to claim 10, the personal verification device as defined in claim 1, wherein:
the characteristic information is a fingerprint, the first detection section is a fingerprint sensor
(See col. 6, lines 1-4); and fingerprint information of the registered person is stored in the first
storage section (See for example, items 344-346, in Fig. 7).

With regard to claim 17, the personal verification device as defined in claim 1, wherein
the second detection section includes a pulse wave sensor having a light emitting element and a
light receiving element, and optically detecting the pulse wave of the operator (See for example,
col. 8, lines 9-39).

With regard to claim 22, a card-type information storage medium comprising the
personal verification device as defined in claim 1 (See for example, col. 4, lines 59-65).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
patent by another filed in the United States before the invention by the applicant for patent, except that an
international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
subsection of an application filed in the United States only if the international application designated the United
States and was published under Article 21(2) of such treaty in the English language.

6. Claims 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Sunstein, et al
(6,985,887).

With regard to claim 26, as best understood, Sunstein, et al discloses a personal
verification device (See for example, Figs. 2 and 6) comprising: a detection section which detects

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an operator's biological information, i.e., user's physiological information, which changes with time, i.e., new physiological information obtained at a current time (See for example, item 24, in Fig. 2; and item 14, in Fig. 1); a first storage section which stores reference information (See for example, item 13, in Fig. 1) which is compared with the biological information (See for example, item 15, in Fig. 1); a second storage section which stores historical information on the biological information detected by the detection section (which corresponds to item 14, in Fig. 1); an update, i.e., modification, section which updates the reference information in the first storage section, based on the historical information in the second storage section (See for example, item 16, in Fig. 1); and a verification, i.e., test, section which outputs a signal indicating that the operator is true, i.e., authorized user, based on the result of comparison between the biological information and the reference information (See for example, col. 7, lines 50-57; and Figs. 2 and 5).

With regard to claim 27, a card-type information storage medium comprising the personal verification device as defined in claim 26 (See for example, col. 6, line 58 – col. 7, line 10).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 11-13, 16, 18-20, 22-25, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osten, et al (5,719,950) in view of Harkin (6,327,376).

With regard to claim 11, Osten, et al (herein after "Osten") discloses all of the claimed subject matter as already discussed above in paragraph 4, and incorporated herein by reference. Osten does not expressly call for wherein the fingerprint sensor detects a fingerprint by detecting capacitance which changes corresponding to ridges and valleys on a surface of a fingertip of the operator. However, Harkin (See for example, Figure 1) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Harkin into the system of Osten, and to do so would at least determine positions of the ridges of a person's fingerprint using a capacitance effect resulting from the proximity of ridges of the fingerprint to individual sensing elements of the fingerprint sensing device (See col. 5, lines 54-59).

With regard to claim 12, the personal verification device as defined in claim 11, wherein the fingerprint sensor includes M (M is an integer equal to or larger than two) rows of power supply lines (See item 18, in Fig. 1 of Harkin) N (N is an integer equal to or larger than two) columns of output lines (item 20, in Fig. 1 of Harkin), and MxN capacitance detection elements, respectively provided at intersections of the M rows of power supply lines and the N columns of output lines (As shown in Fig. 1 of Harkin).

With regard to claim 13, the personal verification device as defined in claim 12, wherein: each of the MxN capacitance detection elements includes a signal detection element and a signal amplification element; the signal detection element includes a capacitance detection electrode

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and a capacitance detection dielectric film, and the signal amplification element is a thin film.

MIS semiconductor device for signal amplification which includes a gate electrode, a gate insulating film, and a semiconductor film (See Figs. 4-6 of Osten; and col. 1, line 63-col. 2, line 20 and col. 6, lines 24-41 of Harkin).

With regard to claim 16, the personal verification device as defined in claim 12, further comprising: a start switch which activates the personal verification device when the fingerprint sensor detects a touch of a finger (See for example, col. 7, lines 27-29 of Osten; and col. 10, lines 29-37 of Harkin).

With regard to claim 18, the personal verification device as defined in claim 10, wherein: the second detection section includes a pulse wave sensor having a light emitting element and a light receiving element, and the fingerprint sensor is provided on a top surface of the pulse wave sensor, and part of the fingerprint sensor intersecting the path of the light emitted by the light emitting element or received by the light receiving element being formed of a material transparent to the wavelength of the light emitted by the light emitting element (See for example, Figs 2-3 of Osten; and col. 7, lines 23-40 and Fig. 5 of Harkin).

With regard to claim 19, the personal verification device as defined in claim 18, wherein the pulse wave sensor is forbidden to detect a pulse wave when a fingerprint detected by the fingerprint sensor has been determined to be false by the verification section (See for example, col. 8, lines 40-45 of Osten).

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With regard to claim 20, the personal verification device as defined in claim 17, further comprising: a low-cut filter which cuts out a low frequency component from the pulse wave detected by the pulse wave sensor (which reads on col. 8, lines 40-42 of Osten).

With regard to claim 22, a card-type information storage medium comprising the personal verification device as defined in claim 1 ((See for example, col. 4, lines 59-65 of Osten; and col. 10, lines 38-50 of Harkin).

With regard to claim 23, the card-type information storage medium as defined in claim 22, further comprising: a display section which displays notification that the card-type information storage medium is in an available state, based on the signal from the verification section (which reads on col. 10, lines 44-50 of Harkin).

With regard to claim 24, an information processing system comprising: the card-type information storage medium as defined in claim 22; and an information processing device which performs processing based on information in the card-type information storage medium, wherein the information processing device reads information other than the information used for personal verification from the card-type information storage medium, after the signal is input from the verification section (Which reads on col. 4, lines 8-35 and col. 10, lines 45-50 of Harkin).

With regard to claim 25, the information processing system as defined in claim 24, wherein the information processing device has a power supply section which supplies power to the card-type information storage medium (which reads on Fig. 9 of Harkin).

With regard to claim 28, a card-type information storage medium comprising the personal verification device as defined in claim 18, wherein a second thin film device having at

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least the fingerprint sensor is provided on a top surface of a first thin film device having at least the pulse wave sensor (which reads on Figs. 3 and 5 of Harkin).

With regard to claim 29, the card-type information storage medium as defined in claim 28, further comprising: a display section which displays notification that the card-type information storage medium is in an available state, based on the signal from the verification section (which broadly reads on col. 4, lines 8-35, and col. 10, lines 45-50 of Harkin; and col. 4, lines 59-65 of Osten)

With regard to claim 30, an information processing system comprising: the card-type information storage medium as defined in claim 29; and an information processing device which performs processing based on information in the card-type information storage medium, wherein the information processing device reads information other than the information used for personal verification from the card-type information storage medium, after the signal is input from the verification section (Which reads on col. 4, lines 8-35 and col. 10, lines 45-50 of Harkin)..

With regard to claim 31, the information processing system as defined in claim 30, wherein the information processing device includes a power supply section which supplies power to the card-type information storage medium (which reads on Fig. 9 of Harkin).

9. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osten, et al (5,719,950) in view of Yasukawa, et al (English translation of Japanese patent No. 000422).

With regard to claim 6, Osten, et al (hereinafter "Osten") discloses all of the claimed subject matter as already discussed above in paragraph 4, and incorporated herein by reference. Osten, et al does not expressly call for wherein the index extraction section includes a time ratio

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extraction section which extracts as the at least one index the time ratio of a plurality of inflection points in the pulse wave detected by the second detection section. However, Yasukawa, et al (See for example, paragraph 0037; and Fig. 14) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Yasukawa, et al into the system of Osten, and to do so would at least increase the accuracy of the pulse signal that is generated during the scanning of a live body/user.

With regard to claim 5, the personal verification device as defined in claim 1, wherein the index extraction section includes: a calculation section which calculates an acceleration (which corresponds to distance) waveform of the pulse wave detected by the second detection section, and a wave height ratio extraction section which extracts as the at least one index a wave height ratio of a plurality of inflection points in the acceleration waveform (Figs. 7-13 of Yasukawa, et al; and col. 10, lines 17-42 of Osten).

With regard to claim 7, the personal verification device as defined in claim 6, wherein the time ratio extraction section extracts a ratio of a cycle and an ejection time of the pulse wave detected by the second detection section from the pulse wave (See Figs. 7-13 of Yasukawa, et al).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osten, et al (5,719,950) in view of Sunstein, et al (6,985,887).

With regard to claim 9, Osten, et al (hereinafter "Osten") discloses all of the claimed subject matter as already addressed above in paragraph 4, and incorporated herein by reference. Osten does not expressly call for a historical information storage section which stores historical information, i.e., physiological information, on the at least one index extracted by the index

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extraction section; and an information update section which updates, i.e., modifies, the second reference information in the second storage section based on the historical information.

However, Sunstein, et al (See for example, item 111 and 112, in Fig. 1). Therefore, it would have been obvious to incorporate the teaching as taught by Sunstein, et al into the system of Osten, and to do so would further enhance the accuracy of authenticating an individual by reflecting detected changes in the pre-stored data.

Conclusion


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Numbers: 3581282, 6943665, 6993378, and 7013030; US Patent Application Publications: 20020013717, 20020091328 and 20030150911.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


DANIEL G MARIAM
Primary Examiner
Art Unit 2624

February 7, 2007